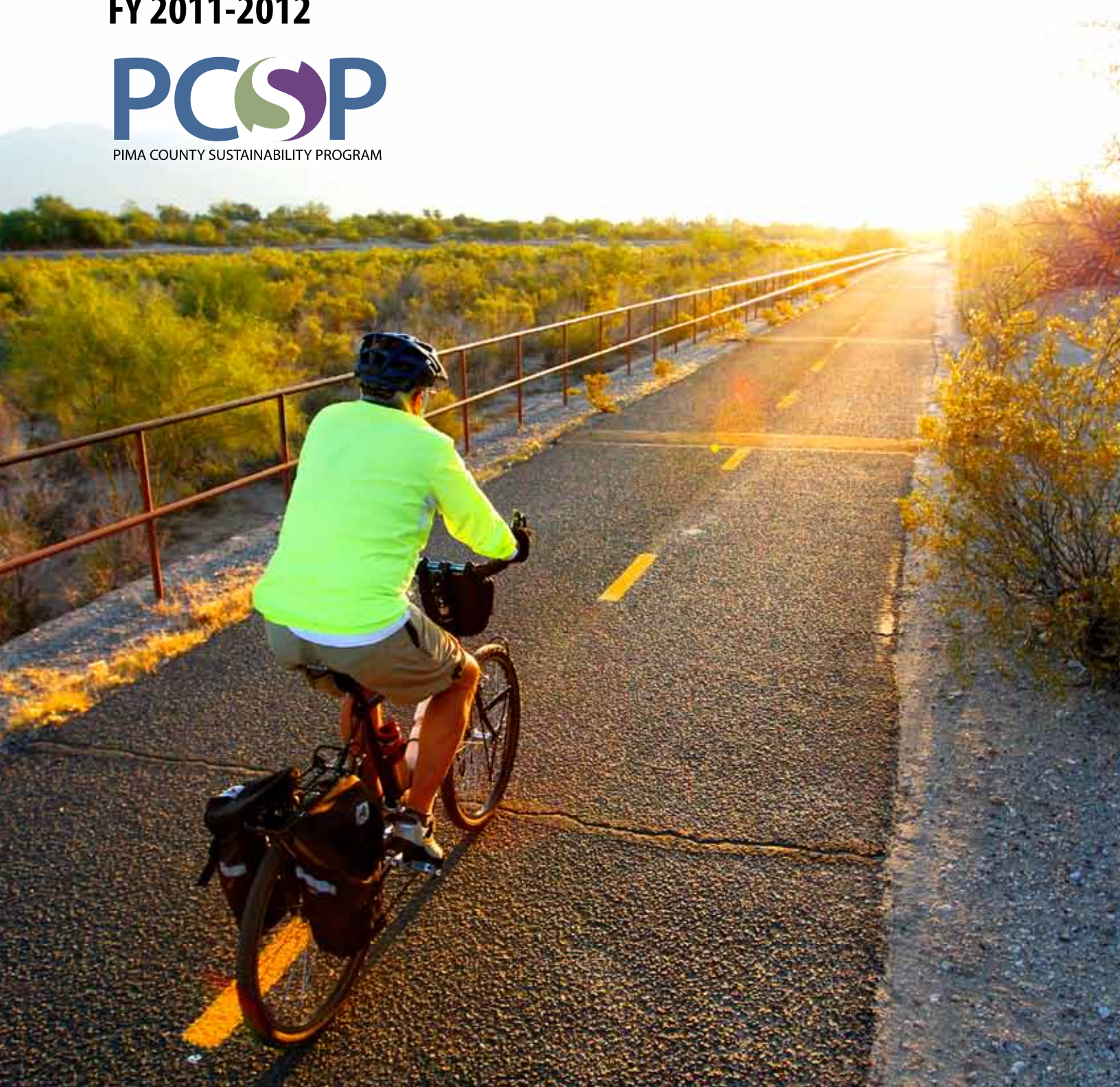


Sustainable Action Plan for County Operations

**Year Four Implementation Report Card
FY 2011-2012**



Making and Measuring Our Progress

The Pima County Board of Supervisors unanimously adopted the Sustainable Action Plan for County Operations in August 2008. Since then, staff has taken on a diverse range of activities and programs designed to integrate sustainable practices into virtually all facets of the way County government operates – from the cars we drive, to the energy and water we consume, to the construction of our buildings, to the products we purchase, to the way we view and handle our “used” materials. In April 2011, the Board of Supervisors expanded the Sustainable Action Plan by adopting the Health and Wellness Chapter addendum, which can be viewed at www.pima.gov/hr/health/sustainabilitywellness.

This Sustainability Report Card charts the Action Plan’s fourth year of implementation.

In all, County Departments tackled 44 action items programmed for Fiscal Year 2011/2012, resulting in significant accomplishments in waste reduction, energy conservation, green building, renewable energy, land conservation and management, green purchasing, and water conservation and management.

The report card showcases some of these successes and also provides feedback to County Supervisors, staff, and the public on how the County is performing on 37 specific “success indicators.” The success indicators include measurable performance targets that allow the County to track its progress during each year of the five-year action plan. They also help guide the County in areas where it strives to improve its performance, particularly in response to the availability of resources or evolving policies, technologies, and best practices.

To view or download copies of the Sustainable Action Plan for County Operations or this Sustainability Report Card, please go to www.pima.gov.

Comments and suggestions are always welcome and may be directed to the Pima County Steering Committee, attention Robin Johnson, Sustainability Manager, at robin.johnson@pima.gov or (520)740-6946.

Sustainability Topic	Page Number	Year 1: FY 2008/09 Targets Met	Year 2: FY 2009/10 Targets Met ??	Year 3: FY 2010/11 Targets Met	Year 4: FY 2011/12 Targets Met
Alternative Fuel	4	2/4	1/4	1/4	2/4
Green Building	5	2/3	2/3	3/3	2/3
Green Purchasing	6	Initiated	4/6	4/6	5/6
Renewable Energy and Conservation	8	2/5	3/5	3/5	3/5
Waste Reduction	10	1/2	1/2	0/2	0/2
Water Conservation	11	1/6	1/6	Revised	3/6
Land Conservation/Mgt.	14	4/4	3/4	3/4	4/4
Carbon Footprint Reduction	15	Initiated	In process	In process	In process
Health and Wellness	16	Not applicable	Not applicable	Not applicable	Initiated
Targets Met/Surpassed		12/24 or 50%	15/30 or 50%	14/24 or 58%	19/30 or 63%

Sustainability Success Stories

Year Four

As a result of the combined efforts of multiple departments, thousands of dedicated staff, and the support of County leadership, Pima County achieved the following sustainability successes in FY 2011/2012:

- Reduced energy expenses by \$1.5 million (10%) compared to the baseline year of 2008.
- Managed 3.6 megawatts of renewable energy, which represents about 7% of the County's annual energy load and surpassed the 2012 target.
- Increased the number of alternative fuel vehicles in the Sheriff's Department's fleet by 51% so that alternative fuel vehicles are now 53% of its fleet.
- Increased employee alternative mode usage by 41% since 2010.
- Acquired 1,400 acres of land for open space conservation purposes.
- Increased the proportion of office supply dollars spent on eco-friendly products by 276% over the baseline year of 2008.
- Increased the purchase of recycled content paper to 70% of all copier/printer paper purchases.
- Increased the number of County parks served by reclaimed water by 120%.
- Adopted the Employee Health and Wellness Chapter for inclusion into the Sustainable Action Plan.

Areas in Need of Additional Focus for FY 2011/2012

This Report Card helps Pima County identify areas where solid sustainability advances are being made, as well as areas in need of more attention. In response to the latter goal, this Year Four Report Card includes "improvement plans" for a handful of success indicators. These improvement plans spell out actions the County will take to enhance performance in those specific areas.

In addition, because the Sustainable Action Plan for County

Operations is intended to be adaptive and evolve over time based on changing conditions, knowledge and technologies, staff continues to evaluate the relevance and appropriateness of each indicator and target. No major modifications were recommended this year since staff is preparing to update the five-year plan.

The end result is the evolution of a Sustainable Action Plan and a County organization that is committed to achieving excellence in operational sustainability and efficiency.



On the Cover: The Loop is a 55-mile, car-free, active transportation pathway being developed around metropolitan Tucson with connections to Marana and Oro Valley. Pima County residents and visitors can enjoy The Loop on foot, bikes, skates or horseback. When completed in the next two years, The Loop will connect five municipalities, four major employment centers, 27 recreation centers, 29 public bus routes, 500 miles of regional bike paths, and over 600,000 Pima County residents.

In addition to providing safe, alternative transportation, The Loop attracts visitors to our community, encourages exercise, expands recreational opportunities, improves air quality, and promotes economic development. As FY 2011/2012 came to a close employees and residents report they are utilizing the nearly 35 miles of completed pathways to commute, exercise and recreate.

For maps and more information, visit www.pima.gov/TheLoop.

Report Card Legend



Achieved Target



In Progress



Not Met, But Shows Progress



Not Met

1



Success Indicator: Number of Environmentally Friendly Fleet Vehicles

Responsible and Supporting Departments: Fleet Services, All Departments

Target: 100 vehicles, or 25% of vehicle fleet, by 2008; 30% of the fleet by 2009; and 50% of the fleet by 2017 (excluding Sheriff's vehicles)

Score/Progress Report: The County fleet totals 839 non-Sheriff vehicles; 14% are flex fuel or hybrid vehicles. The Sheriff's fleet totals 637 vehicles; 53% are flex fuel or hybrid vehicles. When combined, 32% of all County fleet vehicles are environmentally friendly. Fleet Services will continue to work towards achieving the goal of making half of the County's fleet environmentally friendly by 2017. This year Fleet Services purchased two Chevrolet Volt cars and are evaluating their performance for future purchases.

2a



Success Indicator: Education of County Employees

Responsible and Supporting Departments: Fleet Services, Risk Management, Information Technology

Target: 100% of new employees using County vehicles trained on how to drive more efficiently and reduce vehicle miles traveled. 100% of employees enrolled in Defensive Driving class trained on how to drive more efficiently.

Score/Progress Report: 100% of all employees who complete the County's Online Defensive Driving Course receive Driver Energy Conservation Training. Risk Management has taken several measures during FY 2011/2012 to ensure that all County drivers are compliant with the triennial driver training requirement. If it is discovered that the employee is not compliant with the training, Risk Management contacts the employee to assist with bringing them into compliance.

2b



Success Indicator: Education of County Employees

Responsible and Supporting Departments: Environmental Quality, Human Resources, Information Technology

Target: Articles promoting travel reduction, alternative fuel vehicles and fuel-efficient driving techniques published in employee newsletters and on County websites.

Score/Progress Report: Staff provides Travel Reduction Program (TRP) information, resources and literature to employees regarding transit, carpooling, vanpooling, bicycling and walking for commutes. In addition staff promotes Sun Rideshare resources and community events that encourage the use of alternative modes of transportation via Countywide emails to employees. Staff also encourages the use of alternative fuel fleet vehicles and bicycles from the PCDOT bike share program for work-related trips, and provides information on ways to drive more fuel-efficiently.

3



Success Indicator: Participation of County Employees in Trip Reduction Programs

Responsible and Supporting Departments: Environmental Quality, Human Resources, Information Technology

Baseline: Historical participation rate of 25%

Target: Achieve a minimum of 30% participation by FY 2010

Score/Progress Report: An employee commute survey was administered in May and the results indicated that 27% of trips are made using alternate modes. This represents a 41% increase in alternate mode usage compared with the 19.2% usage rate indicated in the 2010 survey. There was a 100% increase in commutes by bicycle, an 83% increase in commutes by transit, and a 10% increase in commutes via carpool/vanpool.



Alternative Fuel Vehicles Success Story:

The Pima County Sheriff's Department introduced four Toyota Prius vehicles to replace older models for the Sheriff's Auxiliary Volunteers (SAV). The volunteers previously used high-powered Sheriff's patrol cars. The Priuses were formerly in the County Fleet and underutilized. The SAV patrols in Pima County Neighborhood Watch areas and County parks, responds to incidents, and performs general volunteer duties.

The Prius patrol has Sheriff's markings and "Assist Team" graphics, as well as red and blue emergency lights and a Sheriff's radio. Their use is expected to reduce the cost for the volunteer program because of excellent gas mileage and is in line with Pima County's sustainability efforts. The Prius will help to distinguish volunteers from Sheriff's deputies. Over the next several years, most SAV vehicles will be replaced with hybrid vehicles.

4



Success Indicator: Attendance at Green Building Educational Series

Responsible and Supporting Departments: Development Services, Facilities Management

Target: Minimum of 20 in attendance

Score/Progress Report: The Green Building Program offered ten training sessions last year to over 250 building professionals and members of the public.

5



Success Indicator: LEED Accreditation of County Employees

Responsible and Supporting Departments: Development Services, Facilities Management

Target: Minimum of 14 Leadership in Energy and Environmental Design (LEED) Accredited Professionals by 2010.

Score/Progress Report: No staff achieved accreditation this year and four accredited staff left County employment, bringing the total number of County LEED-accredited professionals to 10.

Improvement Plan: Staff from Development Services and Facilities Management will work to develop a better mechanism to track LEED-accredited staff and explore incentives to encourage employees to pursue accreditation.

6



Success Indicator: Percentage of LEED Silver-Certified Buildings

Responsible and Supporting Departments: Development Services, Facilities Management

Target: 100% of all new occupied County-funded buildings and 100% of all building additions greater than 5,000 square feet

Score/Progress Report: The Water and Energy Sustainability Center at the Regional Wastewater Reclamation Department's Water Reclamation Campus was completed and is on track to achieve LEED Silver certification.

Green Building Success Stories:

EPA Workshop: In April 2012 Pima County Development Services, Planning Division, hosted a two-day workshop on sustainable development and zoning codes. The workshop was funded by a grant from the Environmental Protection Agency to help identify opportunities to amend the Pima County Zoning Code to encourage sustainable private development. The workshop meetings and associated public presentation were well attended by the general public, County staff, development professionals and consultants, and elected official representatives.

After the workshop the facilitators provided the County with a list of recommended strategies to encourage more sustainable land use by means of amending the zoning code and developing policy actions. County Planning staff is in the process of evaluating and prioritizing those recommendations according to the County's short- and long-term sustainability goals.



The Water and Energy Sustainability Center was built to LEED Silver standards.

Tucson/Pima County



Net Zero Energy Standard

Net-Zero: Pima County partnered with the City of Tucson to create a Net-Zero Energy Building Standard. This standard can be used by project teams to design and operate buildings that will make as much energy as they use. Net-zero homes and apartments are cash flow positive from day one. The lower energy bills more than pay for any increase in mortgage payment, thus saving the home owner or resident between \$40 and \$80 every month.

The standard was adopted by reference and is available at: www.pima.gov/netzero.

Green Purchasing

7



Success Indicator: New and Existing Contracts Include “Green” Specifications Pursuant to Sustainable Action Plan, Activity No. 8

Responsible and Supporting Departments: Procurement, All Departments

Target: 100% of new contracts to include green specifications by January 2009; all contracts in subsequent years to include green specifications whenever applicable. 100% of existing contracts updated with green specifications, as applicable, by June 2010.

Score/Progress Report: When practical, pursuant to Board of Supervisors Procurement Policy D29.2, Section IV, Department Directors are responsible for assuring that contracts include green specifications that help advance the County’s sustainability goals and policies. Departments have affirmed general conformance when establishing new and renewing existing contracts.

8



Success Indicator: Percentage of Green Products Purchased on the Staples Website

Responsible and Supporting Departments: Procurement, All Departments

Baseline: 9.1% of products (= \$170,844)

Target: 18% of products purchased in FY 2010

Score/Progress Report: County Departments spent an average of 34.21% of their office supply budget on eco-friendly purchases with a total of \$381,399.

9



Success Indicator: Purchase of ENERGY STAR™ Rated Appliances and Equipment

Responsible and Supporting Departments: Facilities Management, Procurement, All Departments

Target: 100% of appliances and equipment purchased to meet ENERGY STAR™ standards by June 2010

Score/Progress Report: All new appliances are ENERGY STAR™-rated when purchased as part of a construction/upgrades project that is overseen by Facilities Management.

10



Success Indicator: Use of Non-toxic Products for Janitorial Services

Responsible and Supporting Departments: Facilities Management

Target: 100% of janitorial service contracts to be updated with non-toxic and environmentally friendly product specifications in 2010

Score/Progress Report: All janitorial contracts for Pima County require the use of non-toxic and environmentally friendly product specifications. In addition, Facilities Management has added a Green Cleaning Specification for LEED Silver-rated buildings that require the contractor to clean the building using the Green Seal Standard for Commercial and Institutional Cleaning Services (GS-42). Two buildings are being cleaned in this manner.



Green Purchasing Success Story:

Fleet Services purchased two Chevrolet Volt vehicles to evaluate their performance for County use. The Chevrolet Volt is an all-electric vehicle. It has the added feature of a small gasoline motor that is used to generate electricity to power the vehicle when the battery has run down.

It is the most fuel-efficient compact car on the market as rated by the Environmental Protection Agency (EPA).

11



Achieved

Success Indicator: Employees with Purchasing Responsibilities Attend at least One Green-Purchasing Training Session a Year

Responsible and Supporting Departments: Procurement, All Departments

Target: Employees with purchasing responsibilities to attend at least one green purchasing training session a year, regardless of whether it is offered by the Department Trainer or another Department. This will provide Departments with more flexibility in acquiring the training.

Score/Progress Report: Procurement provided five General Procurement Training sessions that included a brief description of department responsibilities with green specifications in new and existing contracts as defined by Board of Supervisors Procurement Policy D29.2. During September and October, the Sustainability Program and Procurement offered training to major departments regarding how to identify and optimize green attributes and specifications for the major materials and services that they use/purchase. A general PowerPoint presentation was posted on the Sustainability Department Intranet to help Department Purchasing Representatives create and provide eco-friendly training for all employees with purchasing responsibilities.

12



Not Met,
But Shows
Progress

Success Indicator: Purchase of Recycled and/or Forest Stewardship Council Paper

Responsible and Supporting Departments: Procurement, All Departments

Target: All Departments to purchase 30% post-consumer recycled paper

Score/Progress Report: Currently 70% paper purchased meets our 30% post-consumer recycled-content target.

Improvement Plan: The Green Purchasing Sustainability Team will examine the obstacles to compliance with Administrative Procedure 3-29, which requires all departments to purchase recycled paper made with at least 30% post-consumer paper.

The Team will also work with our paper vendor to expand recycled paper options in terms of pricing and quality.

Green Purchasing Success Story:

The Employees Combined Appeal Program (ECAP) is the single solicitation effort for County employees, which provides financial support for over 250 community organizations in Southern Arizona.

The employee-run County ECAP Steering Committee made it their mission to run a "green" campaign with a focus on reducing paper purchase and use.

Small changes such as distributing ECAP Coordinator invitations via email and posting the agency directories and training manuals on the internet allowed the committee to save paper and reduce costs. Their next step is to build the capacity to distribute pledge forms to employees via email.



Renewable Energy & Conservation

13



Achieved

SURPASSED!

Success Indicator: County Expenditures for Energy

Responsible and Supporting Departments: Facilities Management, All Departments

Baseline: Energy expenditures for FY 2008 (\$15.1 million)

Target: Energy expenditures do not exceed \$15.1 million

Score/Progress Report: The County spent \$1,437,158 less in FY 2011/12 than in the base year of 2008. Total energy costs in FY 2011/12 were \$13,579,168. Electricity costs were \$11,093,514 and the natural gas consumption cost was \$2,485,654.

14



In Process

Success Indicator: Energy Consumed by County Buildings and Facilities

Responsible and Supporting Departments: Facilities Management

Baseline: Electrical use in FY 2009 (50.16 MW)

Target: To be determined based on efficiency goals established through County-wide audit

Score/Progress Report: Until the EnergyCAP® utility bill management system has all of our utility bills being imported monthly, complete data does not exist to accurately determine the amount of energy consumed by county buildings.

15



Achieved

Success Indicator: LEED Silver Energy Credits in County Projects

Responsible and Supporting Departments: Facilities Management

Baseline: Projects designed after June 30, 2008

Target: All new buildings obtain a minimum of 65% of available energy credits in LEED-New Construction (NC)

Score/Progress Report: One construction project was completed during FY 2010/11. The Water Energy Sustainability Campus is on track to achieve LEED Silver certification.

16



Achieved

SURPASSED!



EARLY!

Success Indicator: Renewable Energy Use in County Buildings, Parks, and Other Facilities

Responsible and Supporting Departments: Facilities Management, Regional Wastewater Reclamation, Environmental Quality

Baseline: FY 2009 renewable energy use is 1,588 KW

Target: Provide 5% renewable energy for County facilities by 2012; 10% renewable by 2017; and 15% by 2025

Score/Progress Report: The County's renewable energy portfolio now contains more than 3.6 megawatts (MW) of renewable energy sources. This includes 2.3 MW of solar electric power and 1.3 MW of methane-to-electric generation. This represents roughly 7% of annual electric load.

Renewable Solar Electrical Energy Inventory for Pima County Operations

- 4.6 KW The Jackson Employment Center 2009;
- 1 MW Roger Road Wastewater Reclamation Facility (WRF) 2010;
- 1 MW Ina Road WRF 2011; and
- 225 KW Abrams Public Health Center 2011.

A total of 4,636 MWh of solar photovoltaic energy was generated by these four facilities in FY 2011/2012.

The Regional Wastewater Reclamation Department (RWRD) also began exploring opportunities to utilize the biogas produced at their reclamation facilities, which would greatly expand the County's renewable energy portfolio. One option being considered is converting the County vehicular fleet or the RWRD fleet to compressed natural gas (CNG), and using the biogas to produce our own CNG fuel.

17



In Process

Success Indicator: Methane as an Energy Source

Responsible and Supporting Departments: Regional Wastewater Reclamation

Baseline: Methane use in FY 2006/2007 (169.84 million cubic feet)

Target: Increase use by FY 2011

Score/Progress Report: The Regional Wastewater Reclamation Department (RWRD) used approximately 157 million cubic feet of methane gas this year as energy — one-third for electrical generation, two-thirds as thermal energy for operating the digesters at the RWRD treatment plants. The amount decreased this year, but will increase again in the future as the Regional Optimization Master Plan nears completion.

Renewable Energy and Conservation Success Stories:

Central plant retrofit: The Pima County central plant was built in 1967 and provides hot and cold water for the HVAC systems in six major downtown buildings and all of the associated underground garages. Working with an Energy Efficiency and Conservation Block Grant (EECBG), Pima County Facilities Management retrofitted the plant and many of the associated HVAC systems. Employing multiple and diversified local trades, the entire boiler plant was replaced. Building HVAC systems were upgraded and the building's hot water and chill water system pumps were redesigned. The six-month savings from retrofitting the central plant are a remarkable \$55,400 in electrical costs, and \$20,000 to \$30,000 in savings on natural gas.

Electrical savings: Pima County saved \$81,600 in electrical costs within six months as a result of re-lamping the downtown governmental complex and retrofitting the central plant.

Utility Bill Audit: Pima County receives over 1,500 utility bills from over 20 different vendors every month. The bulk of these both in volume and value are received from Tucson Electric Power. Pima County Facilities Management and Pima County Finance Department worked with an outside contractor to audit two years worth of these utility bills. A total of \$244,377 a year in savings was identified. The audit did not cost Pima County anything as the contractor was paid a one-time fee based on a percentage of the savings.

Energy Management Software: Energy-CAP® is an energy management software tool for large or complex organizations that want to measure, manage, and save on utility bills



The Natural Resources, Parks and Recreation Department completed the replacement of the ball field lighting system at Arthur Pack Park fields 1-5 and Winston Reynolds Manzanita Park with the Musco Green Light System operated by a central control. The new lighting system is Dark Skies friendly, reducing light spillage by 50% along with reducing operating costs by 40-50%.

through efficient auditing, accounting and bill payment processes, energy analysis, benchmarking and reporting. Pima County purchased the software using Energy Efficiency and Conservation Block Grant funds. Pima County Facilities Management worked with the Finance department, the utility companies and the Information Technology Department for well over a year to coordinate the creation of the database as well as the interface needed to upload the utility bills directly from the utility companies. This project is a great example of multiple County departments working together along with vendors to better serve the public needs of transparency and accountability.

Solar Incentives: A Renewable Energy Incentive District (REID) was established in April 2012 that offers incentives to encourage utility

or large-scale solar systems or facilities to be developed on specifically selected sites in unincorporated Pima County. There are three categories of REID sites. "Tier 1" sites are the most readily developable sites because they require the least amount of pre-development preparation or submittal steps for the solar developer. The incentives offered generally consist of reduced or waived regulations, reduced or waived fees, and expedited review time of required development plan submittals.

A new solar video library is available at the Solar One Stop Center at the Public Works Building and also online at the solar website, www.SolarOneStopAZ.org.

The videos have information about solar energy, how PV panels work, environmental advantages, and more.

18



Success Indicator: Amount of Waste Diverted from Landfills

Responsible and Supporting Departments: Facilities Management, Human Resources, Environmental Quality, All Departments

Baseline: Tons of landfill waste generated by County operations in FY 2008 (5,593 tons)

Target: 25% reduction by FY 2011

Score/Progress Report: In FY 2011/2012 the County sent 4,383 tons of waste to landfills, 21.6% less than the baseline year of 2008. The County also recycled 591 tons of materials, which accounts for 11.9% of all refuse. The major factor in the reduction of waste going to landfills was the elimination of Posada del Sol as a County building and the loss of spring training at the Stadium. The expansion of sites may have an effect on future totals. Facilities Management conducted an audit of the trash and recycling containers to gather data to improve operational recycling rates.

Improvement Plan: In FY 2012/2013 the Waste Reduction Sustainability Team will kick off a new education program to promote employee and visitor participation in the expanded Recycling While You Work campaign.

19



Success Indicator: Green Events at County Facilities

Responsible and Supporting Departments: Economic Development and Tourism, Information Technology

Target: 100% of special events to implement an Integrated Waste Management Plan beginning in FY 2010

Score/Progress Report: The County's leased properties completed Integrated Waste Management Plans (IWMP) during Year Three and are "green partners" in spirit.

Note: This indicator is not achievable as written, as it requires the county to amend the contracts with the leased properties to require the implementation of the Integrated Waste Management Plans (IWMP) and green guidelines for events.

The Improvement Plan added at the end of Year Three called for the development of "green" guidelines for special events. A document titled "Tips for Planning a Sustainable Event" has been completed and will be incorporated into the Land and Permit Management System so that vendors interested in holding events at County facilities will be encouraged to reduce waste and recycle wherever possible. Economic Development and Tourism will offer the tips to the leased properties, and Natural Resources, Parks and Recreation will provide this information to people who are holding events at Pima County parks.

Improvement Plan: The Waste Reduction Sustainability Team of employees will develop a plan for handling waste and recycling; and other green practices at community events outside of the Natural Resources, Parks and Recreation and Pima County Leased Properties purview. The Team will work with other agencies and community partners to develop a plan that others may adopt for their events. Pima County will lead the efforts to create a more sustainable event at the Tucson Meet Yourself 2012.

Waste Reduction Success Story

In December 2011 the Board of Supervisors approved the County's participation in the TerraCycle™ pen Brigade Program. TerraCycle™ is a company that creates national recycling systems for previously non-recyclable or hard-to-recycle waste, and turns the waste into a variety of products and materials that are sold at major retailers and Staples (our contracted office supply vendor). As part of the program, employees can collect their used pens, markers, highlighters, pencils and crayons and send them to TerraCycle™, where they are remanufactured into new products.

In exchange TerraCycle™ will donate .02 cents per pen to Friends of the Pima County Public Library. The public can participate in the waste diversion efforts at all libraries. Within the first six months of the program, employees have collected 180.5 pounds of waste and earned \$142.52 for the Friends of the Pima County Public Library. Friends of the Library utilize donations to support literacy events, programs and classes. Many of the purchases via the Staples product line are for items made from the TerraCycle™ remanufactured materials.



Water Conservation & Management

Year Four

20



Achieved

Success Indicator: New Buildings Maximize LEED Silver Water-Efficiency Credits

Responsible and Supporting Departments: Facilities Management, Regional Wastewater Reclamation

Baseline: Projects designed after September 2008

Target: All new buildings will obtain at least 60% of water-efficiency credits available

Score/Progress Report: One new building was completed in FY 2011/2012. The Water and Energy Sustainability (WES) Center dedicated on April 20, 2012, was built to LEED Silver Standards.

21a



In Process

Success Indicator: Initiation Of An Employee Education Series That Focuses On Lessons Learned From Local Case Studies Of Landscape Projects And Techniques

Responsible and Supporting Departments: Regional Flood Control District, Facilities Management, Regional Wastewater Reclamation, Stadium District, Natural Resources, Parks and Recreation, Transportation

Baseline: Twelve Natural Resources, Parks and Recreation employees completed the Pima County Cooperative Extension's "Smartscape" training on water-efficient landscape practices

Target: Increase the number of employees participating in education on water-efficient landscape and water-conservation practices

Score/Progress Report: Nineteen Natural Resources, Parks and Recreation employees attended irrigation management training for turf grasses sponsored by the University of Arizona Cooperative Extension.

Water Conservation and Management Success Story:

The Kino Environmental Restoration Project (KERP) continues to be an excellent example of a sustainable environment in Pima County. The project covers 141 acres and contains five different environments including Arizona uplands, open water, riparian communities, wetlands, and mesquite bosque. An extensive pumping and valve system circulates and mixes reclaimed and storm water within the system.

When the monsoon season provides the region with enough rain, KERP-harvested storm water can be used to irrigate the basin's vegetation, the Kino Sports Complex, landscaping and easements along Country Club Road and Ajo Way, as well as landscaping at University of Arizona Medical Center – South Campus, the Abrams Public Health Center and the Juvenile Detention Center.



Water Conservation & Management

21b



Achieved

Success Indicator: Development Of Countywide Guidelines For Low Water-Use And Non-Potable Irrigation in FY 2012/2013

Responsible and Supporting Departments: Regional Flood Control District, Facilities Management, Regional Wastewater Reclamation, Stadium District, Natural Resources, Parks and Recreation, Transportation

Baseline: Continued monitoring and implementation of guidelines and standards

Target: Develop low water-use and non-potable water-use guidelines in FY 2012/2013.

Score/Progress Report: The following guidelines are used by County departments:

- Department of Transportation uses Environmentally Sensitive Roadway (ESR) Guidelines
- Regional Flood Control District uses the Regulated Riparian Habitat Mitigation Guidelines, which include a native plant list and water harvesting techniques
- Natural Resources, Parks and Recreation uses efficient irrigation practices for turf and landscaping, including the landscape conservation practices required by the Arizona Department of Water Resources
- Natural Resources, Parks and Recreation uses the Trails System Guidelines for Native Species: Reconciliation of Habitat Needs and Trail Design
- All County departments that take delivery of reclaimed water from Tucson Water must comply with Tucson Water's Reclaimed Water User Agreements

22



Not Met,
But Shows
Progress

Success Indicator: Water Consumed by Existing County Buildings, Ornamental Landscaping and Roadway Landscaping

Responsible and Supporting Departments: Regional Flood Control District, Facilities Management, Regional Wastewater Reclamation, Stadium District, Natural Resources, Parks and Recreation, Transportation

Baseline: Yet to be established

Target: Reduce baseline water use by at least 5% by 2012; 10% by 2017; and 15% by 2025

Score/Progress Report: Implementation of the EnergyCAP® software will determine the water consumed by existing County buildings. Software implementation is not yet complete. Water consumed by landscaping has been influenced by drought conditions and warmer than normal temperatures.

23



Achieved



SURPASSED!



EARLY!

Success Indicator: Number of County Parks and Number of Miles of the Trail System Served by Reclaimed Water

Responsible and Supporting Departments: Regional Flood Control District, Facilities Management, Regional Wastewater Reclamation, Stadium District, Natural Resources, Parks and Recreation

Baseline: 10 parks served by reclaimed water in FY 2006/2007 (285 AF of reclaimed water)

33.94 miles of trails were maintained by Natural Resources Parks and Recreation in 2008

30.20 miles were irrigated in 2008

20.88 miles were irrigated with reclaimed water in 2008

Target: 20 parks served by 2018

Score/Progress Report:

22 park sites are served by reclaimed water

46.54 miles of Trail System Parks maintained by Natural Resources Parks and Recreation in FY 2011/2012

37.18 miles were irrigated in FY 2011/2012

20.88 miles irrigated with reclaimed water in FY 2011/2012

24



In Process

Success Indicator: Water Consumed by Existing County Park and Recreation Facilities

Responsible and Supporting Departments: Regional Flood Control District, Facilities Management, Regional Wastewater Reclamation, Stadium District, Natural Resources, Parks and Recreation

Baseline: 733 AF of reclaimed water used in 2006. Note: Baseline was adjusted to include the 39 urban parks operated by the County.

Target: No target is recommended because the water consumption can vary depending on temperature, precipitation and drought conditions.

Recommended Modification: Direct reuse and off-channel recharge from both metropolitan area and non-metropolitan area wastewater reclamation facilities as reported in Regional Wastewater Reclamation Department's annual Effluent Generation and Utilization Report will be used. Potable water will not be reported because of the varied sources of delivery from water providers and groundwater wells that are not metered.

Score/Progress Report: 1,126 AF of reclaimed water was delivered to County facilities through the City reclaimed system in 2011

25



In Process

Success Indicator: Acres of Natural Habitat Established or Maintained by County Renewable Water Sources

Note: Renewable water sources include treated effluent, reclaimed water, tainted groundwater, storm water or harvested rainwater. Pumped groundwater or potable water shall not be considered a renewable water source.

Responsible and Supporting Departments: Regional Flood Control District, Facilities Management, Regional Wastewater Reclamation, Stadium District, Natural Resources, Parks and Recreation, Conservation and Sustainability Office

Baseline: 340 acres of riparian habitat enhanced or restored in FY 2009/2010 with County effluent or reclaimed water

Target: 465 acres enhanced or restored by FY 2014/2015; 590 acres by FY 2019/2020; and 715 acres by FY 2024/2025

Score/Progress Report: 347 acres enhanced or restored. Seven acres of riparian habitat were added at the West Branch Santa Cruz River in FY 2011/2012

Water Conservation and Management Success Story:

Natural Resources, Parks and Recreation reduced the turf acreage at Casas Adobes Park by approximately one acre and installed a more efficient replacement irrigation system at the park, corrected drainage issues and is in the process of installing additional native trees.



26



Achieved

Success Indicator: Acres of Conservation Lands System Conserved

Responsible and Supporting Departments: Administration, Conservation and Sustainability Office, Finance, Regional Flood Control District, Information Technology

Target: Acres conserved greater than sites impacted

Score/Progress Report: The County acquired 1,398 acres within the Conservation Lands System (CLS) to be managed for conservation. County public improvement projects impacted less than ½ an acre of land elsewhere within the CLS.

27



Achieved

Success Indicator: Number of Cultural Resources Sites Conserved

Responsible and Supporting Departments: Administration, Conservation and Sustainability Office, Finance, Regional Flood Control District, and Information Technology

Target: Acres conserved greater than sites impacted

Score/Progress Report: The County acquired 23 acres and is in the process of completing erosion protection for the Dakota Wash archaeological site, which encompasses the core area of a Hohokam prehistoric village along the West Branch of the Santa Cruz River. No known historic or archaeological sites were disturbed this fiscal year by County public improvement projects.

28



Achieved

Success Indicator: Acreage of Designated Riparian Habitat Conserved

Responsible and Supporting Departments: Administration, Conservation and Sustainability Office, Finance, Regional Flood Control District, and Information Technology

Target: Acres conserved greater than sites impacted

Score/Progress Report: The County acquired 317 acres of designated riparian habitat to be managed for conservation. County public improvement projects impacted 13 acres of designated riparian habitat elsewhere.

Land Conservation and Management Success Stories

Southeast Regional Park Shooting Range: Pima County made significant improvements to its Southeast Regional Park Shooting Range, including the construction of an educational range, shotgun range, and full berm and earthwork for an eventual 20-station archery range. The 30 acres of new ground disturbance for this project included clearing and grading of four acres of Designated Regulated Riparian Habitat. In consultation with the County's Regional Flood Control District, a Riparian Habitat Mitigation Plan was approved and implemented that included the replacement of Designated Regulated Riparian Habitat through the planting of appropriate plants within other areas of the site.

Buehman Canyon: The County's Regional Flood Control District acquired the 1,000-acre Buehman Canyon Preserve from The Nature Conservancy, most of which was a donation. The Preserve abuts the Coronado National Forest and the County-owned A7 and Six Bar ranches, east of the Santa Catalina Mountains. Buehman Canyon includes a perennial stream surrounded by large stands of a variety of trees, including cottonwood, ash, willow, mesquite, hackberry, oak, sycamore, and juniper. Priority vulnerable species found there include longfin dace and lowland leopard frogs. Over 300 species of birds have been found in the area.



Buehman Canyon Preserve is entirely within the County's Conservation Lands System, includes over 160 acres of Designated Regulated Riparian Habitat, and contains a significant portion of the Buehman Canyon Creek Outstanding Waters designation.

29



Achieved

Success Indicator: Education of County Employees

Responsible and Supporting Departments: Conservation and Sustainability Office, Regional Flood Control District, Natural Resources, Parks and Recreation

Target: Provide annual training to employees on environmental education

Score/Progress Report: A series of meetings were held with Public Works Administration and Project Managers who oversee the construction of public facilities. The purpose of the meetings was to educate these individuals about compliance with the Endangered Species Act as Pima County transitions from project-level compliance to the more regional and coordinated compliance under the County's Multi-species Conservation Plan (MSCP). A memorandum summarizing this effort was also sent to all Public Works directors, Facilities Management, and the Sheriff's Department.

Carbon Footprint Reduction

Year Four

30



In Process

Success Indicator: Reduction in the Carbon Footprint of County Government

Responsible and Supporting Departments: Facilities Management, Environmental Quality, Conservation and Sustainability Office

Baseline: County government emissions = 142,591 metric tons of carbon dioxide equivalent (CO₂e)

Target: In 2020, generate no more CO₂e emissions than in 2007; by 2040, reduce CO₂e emissions by 50% below 2007 levels

The County prepared its first greenhouse gas emissions forecast in FY 2010.

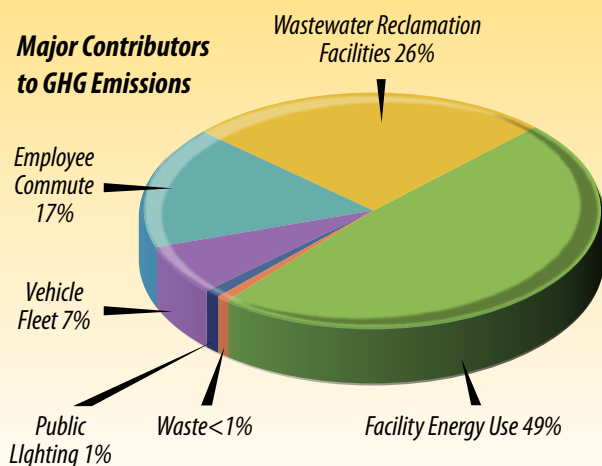
The forecast projects that County Operations will not generate more CO₂e in 2020 than in 2007, the baseline year. Through aggressive implementation of the County's sustainability initiatives, including achieving renewable energy, energy efficiency, water use reduction and conservation targets by 2020 instead of 2025, the County can offset the emissions created by future growth in County Operations between 2007 and 2020.

Score/Progress Report: According to the Pima Association of Governments (PAG) 2012 Regional Greenhouse Gas Inventory, Pima County government emissions equaled 148,924 CO₂e metric tons in 2010. This represents an increase of 4.5% compared to the baseline year of 2007.

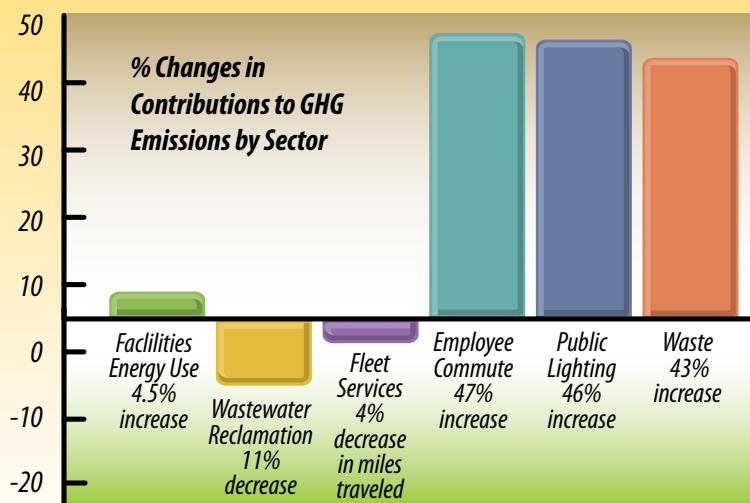
The three largest contributors to Pima County government greenhouse gas (GHG) emissions are:

1. Facility Energy Use: 72,354 metric tons contributed 49% of GHG emissions.
2. Wastewater Reclamations Facilities: 38,862 metric tons contributed 26% of GHG emissions.
3. Employee Commute: 24,485 metric tons contributed 17% of GHG emissions.

Major Contributors to GHG Emissions



% Changes in Contributions to GHG Emissions by Sector



Health and Wellness

On the Path to Progress

In April 2012 the Board of Supervisors adopted the Health and Wellness Chapter addendum to the 2008 Sustainable Action Plan for County Operations. The opportunity to expand the Sustainable Action Plan was made possible thanks to funding from the Communities Putting Prevention to Work (CPPW) grant under the Health Department.

The Health and Wellness Chapter aims to further advance the sustainability goals of Pima County by enhancing our culture of health and wellness. By strengthening existing programs and developing new opportunities to encourage employees to adopt healthier behaviors, the County will simultaneously advance the sustainability goals identified in Resolution No. 2007-84 while also improving the health, wellness and productivity of its workforce.

Below are the seven success indicators included in the new chapter. Although the chapter is not programmed to begin until FY 2012/2013, the County has already started to make progress on some of the indicators. A complete copy of the Health and Wellness Chapter can be found at www.pima.gov/hr/health/sustainabilitywellness.

31



In Process

Success Indicator: Percentage of Employees Who use Active Transportation (Bike, Walk, Public Transit) to Travel to and from Work.

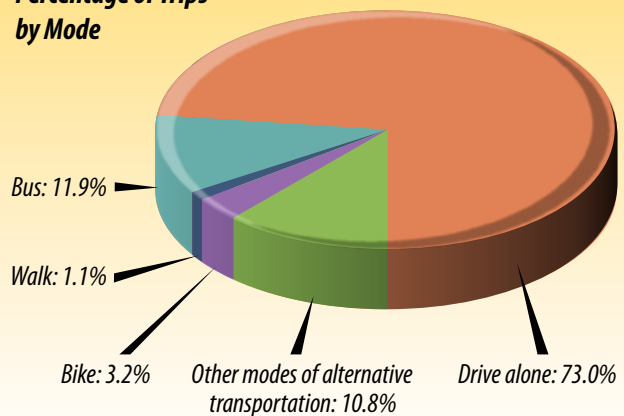
Responsible and Supporting Departments: Environmental Quality

Baseline: 16% of employees reported using active transportation modes to travel to and from work in 2012.

Target: Increase employee use of active transportation modes to travel to and from work.

Score/Progress Report: According to the 2012 PAG Travel Reduction Program employee survey, 27% of Pima County employees used alternate modes of transportation to commute to work. Out of the 27% of employees who used alternative modes, a total of 16.2% of employees used active transportation modes at least once a week to commute to work.

Percentage of Trips by Mode



32



In Process

Success Indicator: Percentage of Employees Who Participate in Healthy Lifestyle Medical Premium Discount Program.

Responsible and Supporting Departments: Human Resources

Baseline: 81% of medically insured employees participated in the FY 2011/2012 Healthy Lifestyle Discount.

Target: Increase participation in FY 2012/2013

Score/Progress Report: The Healthy Lifestyle Premium Discount was expanded for plan year 2012/2013. Employees had the opportunity to earn up to four discounts on their medical premiums for a total of \$20 per pay period. In order to promote accountability, employees were asked to submit documentation to verify their eligibility for each of the discount opportunities.

Among employees who enrolled in the County's insurance plan for FY 2012/2013, 78% participated in at least one of the healthy lifestyle discount actions. The slight decrease compared to last year can likely be explained by the additional reporting requirements asked of employees for FY 2012/2013.

33



In Process

Success Indicator: Provision of Health and Wellness Education for County Employees

Responsible and Supporting Departments: Human Resources, Communications Office, Environmental Quality, all Departments

Targets:

1. Publish 12 monthly articles promoting various programs and opportunities available to employees that encourage healthy lifestyle behaviors and recognize employee achievements through the eScoop newsletter.
2. Publish four articles that promote the use of the Bike Sharing Program and other modes of active transportation to travel for work-related meetings.
3. Provide annual educational opportunities for employees to review all of the benefits and programs that the County offers.

Score/Progress Report: The eScoop employee newsletter resumed publication in January 2012 and now features a monthly column *This Is My Healthy*, which provides employees with healthy lifestyle tips each month. The Wellness Program also began publishing a monthly Healthy Happenings newsletter in order to keep employees informed about all of the wellness activities and resources available.

34



In Process

Success Indicator: Implementation of Annual Health and Wellness Survey for Employees

Responsible and Supporting Departments: Human Resources, Health, Office of Sustainability and Conservation, Risk Management

Baseline: A standardized survey that can be tracked year to year will be developed and implemented by the end of FY 2012/2013, after which a baseline will be established.

Target: Increase response rates of County employees during Phase 2 of the Health and Wellness Chapter.

Score/Progress Report: In order to qualify for one of the four Healthy Lifestyle Premium Discounts offered for plan year 2012-2013 employees were asked to complete an online Health Assessment provided by the County's insurance provider. Among employees enrolled in the County's health insurance plan, 87% completed the Health Assessment. This is a large increase over the previous year, when only 34% of employees completed the Health Assessment.

Health and Wellness Success Stories:

Worksite Fitness Classes: The Pima County Employee Wellness program partners with the Wellness Council of Arizona to offer free and low-cost fitness and meditation classes to employees during their lunch breaks.

The lunch time classes are offered at various locations and provide employees with a convenient opportunity to improve their health and reduce stress during the work day.



Active Commute: Bicycle commuting is a great way for employees to improve their health while also saving money and helping the environment. The County provides employees with various resources and incentives to help encourage bicycle commuting as well as the use of other active and alternative transportation modes to commute.

A pilot Trip Reduction Employee Rewards and Recognition Program was developed and implemented in FY 2011/2012. During the time of the pilot program, there was a 126% increase in the number of County employees entering data in the Commute Calendar. Staff is now working with the PAG Sun Rideshare Program to encourage employee participation in the regional 2012 Commuter Contest.



35



In Process

Success Indicator: *Percentage of Items Purchased in Applicable Healthy Vending Machines that are Designated as "Green" (Healthiest Option) or "Yellow" (Healthier Options). Items Designated "red" are the Least Healthy Option.*

Responsible and Supporting Departments: Health, Facilities Management

Baseline: Establish baseline using data from the evaluation report, when available.

Target: A target will be determined once the baseline has been established.

Score/Progress Report: The Abrams Public Health Building conducted a four-month pilot of the Smart Snacking program. During the pilot period, vending machine items designated as "green" or "yellow" accounted for 75% of all vending machines sales. The results of the pilot study are encouraging and the County hopes to expand the program to additional worksites.

36



In Process

Success Indicator: *Participation in Preventative Lifestyle and Chronic Disease Management Programs.*

Responsible and Supporting Departments: Human Resources

Target: Increase employee participation.

Score/Progress Report: The Pima County Employee Wellness Program offers a variety of programs throughout the year depending on employee interests and needs as well as available resources. In FY 2012/2013 staff will determine the most appropriate and consistent way to measure employee participation rates.

37



In Process

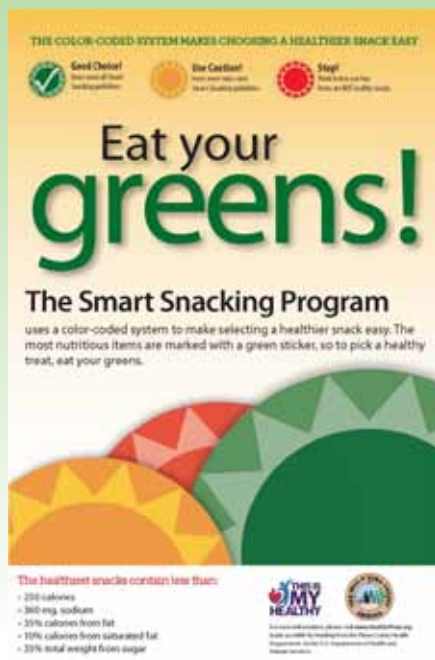
Success Indicator: *Health Status Profile of Pima County Employees*

Responsible and Supporting Departments: Human Resources, Health

Baseline: Establish a baseline profile using data from all available resources.

Target: Improve employee health outcomes through targeted interventions during Phase 2 of the Health and Wellness Chapter.

Score/Progress Report: This will be completed during FY 2012/2013.



Health and Wellness Success Story:

The Smart Snacking Program was designed to help employees identify healthy snack options in workplace vending machines. The simple three-color system categorizes items based on healthy standards for fat, saturated fat, sugar, sodium and calories.

The most nutritious snacks are marked with a green sticker, so if employees want to pick a healthy treat, they can choose anything with a green sticker.

Glossary of terms for Year 4 Report Card:

Acre-foot (AF): A unit of volume used to measure large-scale water resources. It is equal to the volume of one acre of surface area to a depth of one foot. 1 AF = 43,560 cubic feet or 325,900 gallons.

Active transportation: Using human-powered transportation to move around. The most popular modes of active transportation include walking and cycling. Riding the bus is often considered active transportation because of the need to walk or bike to and from bus stations.

Alternative transportation: Refers to transportation modes other than driving a single-occupant vehicle, such as carpooling, mass transit, biking and walking. Choosing alternative modes of transportation provides many benefits such as cost and time saving, improved air quality, reduced congestion, and less dependency on fossil fuels.

Carbon dioxide equivalent (CO₂e): A metric used to compare the emissions from various greenhouse gases based upon their global warming potential.

Carbon footprint: The total amount of greenhouse gases that are emitted into the atmosphere each year by a person, family, building, organization, or company.

Conservation Lands System (CLS): The Conservation Lands Systems (CLS) Regional Plan Policy was adopted as part of the Environmental Element of the Pima County Comprehensive Plan Update in December 2001 and was updated June 21, 2005. The CLS categorizes and identifies locations of priority biological resources within Pima County and provides policy guidelines for the conservation of these resources.

These guidelines are applied to certain types of land use changes requested of the Board of Supervisors.

Effluent: Wastewater — treated or untreated — that flows out of a treatment plant, sewer, or industrial outfall. Generally refers to wastes discharged into surface waters.

Energy Star: An international standard for energy-efficient consumer products. Devices carrying the Energy Star service mark generally use 20–30 percent less energy than required by federal standards.

Green Seal Standard for Commercial and Industrial Cleaning Services (GS-42): This Green Seal standard establishes environmental requirements for cleaning service providers of commercial, public, and institutional buildings, including in-house and external cleaning services, to create a green cleaning program that protects human health and the environment.

Greenhouse Gas (GHG): Any gas that absorbs infrared radiation in the atmosphere. Greenhouse gases include carbon dioxide, methane, nitrous oxide, ozone, chlorofluorocarbons, hydrochlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

HVAC system: Refers to the system used to provide heating and cooling services to buildings. HVAC stands for heating, ventilation, and air conditioning.

Kilowatt (KW): A unit of power equal to 1,000 watts.

LEED: Stands for Leadership in Energy and Environmental Design. LEED certification provides independent, third-party verification that a building, home or community was designed and built using strategies aimed at achieving high performance in key areas of human and environmental health.

Net-zero energy building: A building with zero net energy consumption

and zero net carbon emissions annually.

Megawatt (MW): A unit of power equal to 1 million watts.

Multi-Species Conservation Plan (MSCP): A proposal to minimize and mitigate, to the maximum extent practical, incidental take of multiple species that may occur in the plan area due to specified, lawful activities. The MSCP has been likened to an insurance policy that provides “coverage” against legal liability for incidentally hurting, harming or harassing species protected under the Endangered Species Act (ESA).

The MSCP serves as Pima County's habitat conservation plan for purposes of obtaining a Section 10 incidental take permit under the ESA.

Potable water: Water that is safe enough to be consumed by humans with low risk of immediate or long-term harm.

Reclaimed water: Wastewater (sewage) that is treated to remove solids and certain impurities, and used in sustainable landscaping irrigation or to recharge groundwater aquifers.

Renewable Energy: Energy that comes from natural resources such as sunlight, wind, rain, tides, and geothermal heat, which are naturally replenished.

Riparian habitat: The community of plant and wildlife found along the banks of a river, stream, lake or other body of water. Riparian habitats are ecologically diverse and may be home to a wide range of plants and animals.



Joggers take advantage of the sun and shade and car-free safety of The Loop. The Loop connects paths along the Santa Cruz, Rillito and Pantano rivers with greenways along the Julian Wash and Harrison Road. One-third of Pima County residents live within one mile of The Loop.



www.pima.gov

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Sustainability Success Story:



This publication is printed on paper made from 55% recycled fiber content, with 30% post-consumer waste paper, thereby meeting Sustainable Action Plan Success Indicator number 12.